

# Canon

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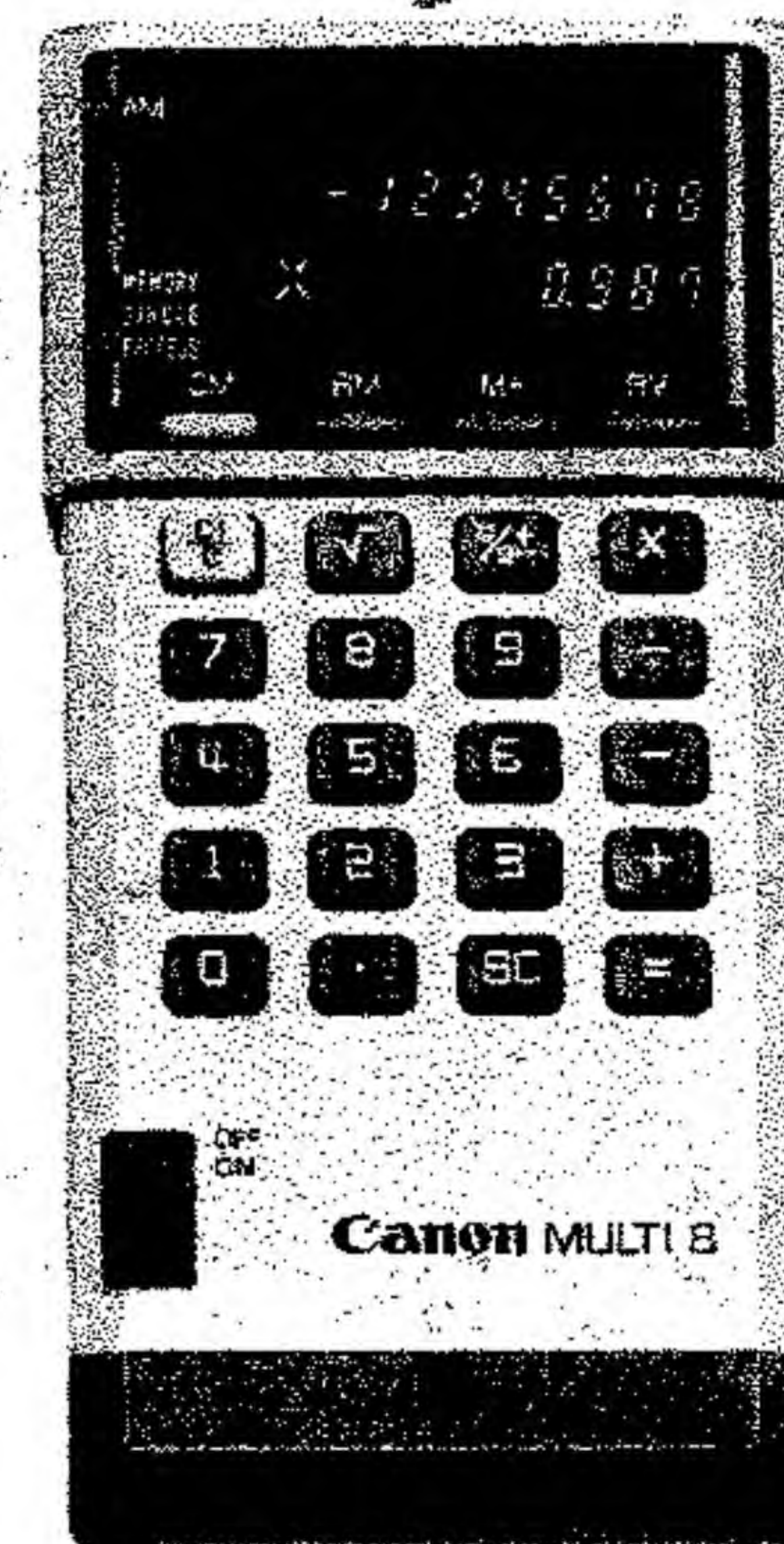
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# Canon MULTI 8

## INSTRUCTIONS



English Edition



## Introduction

The Canon Multi 8 is Canon's newest unique handheld calculator with versatile specifications.

One of its most important features is a dual display system—one not found in other calculators. This calculator also has a Display Mode Selection Switch which sets the calculator to any of three modes—MEMORY, PROCESS or SINGLE.

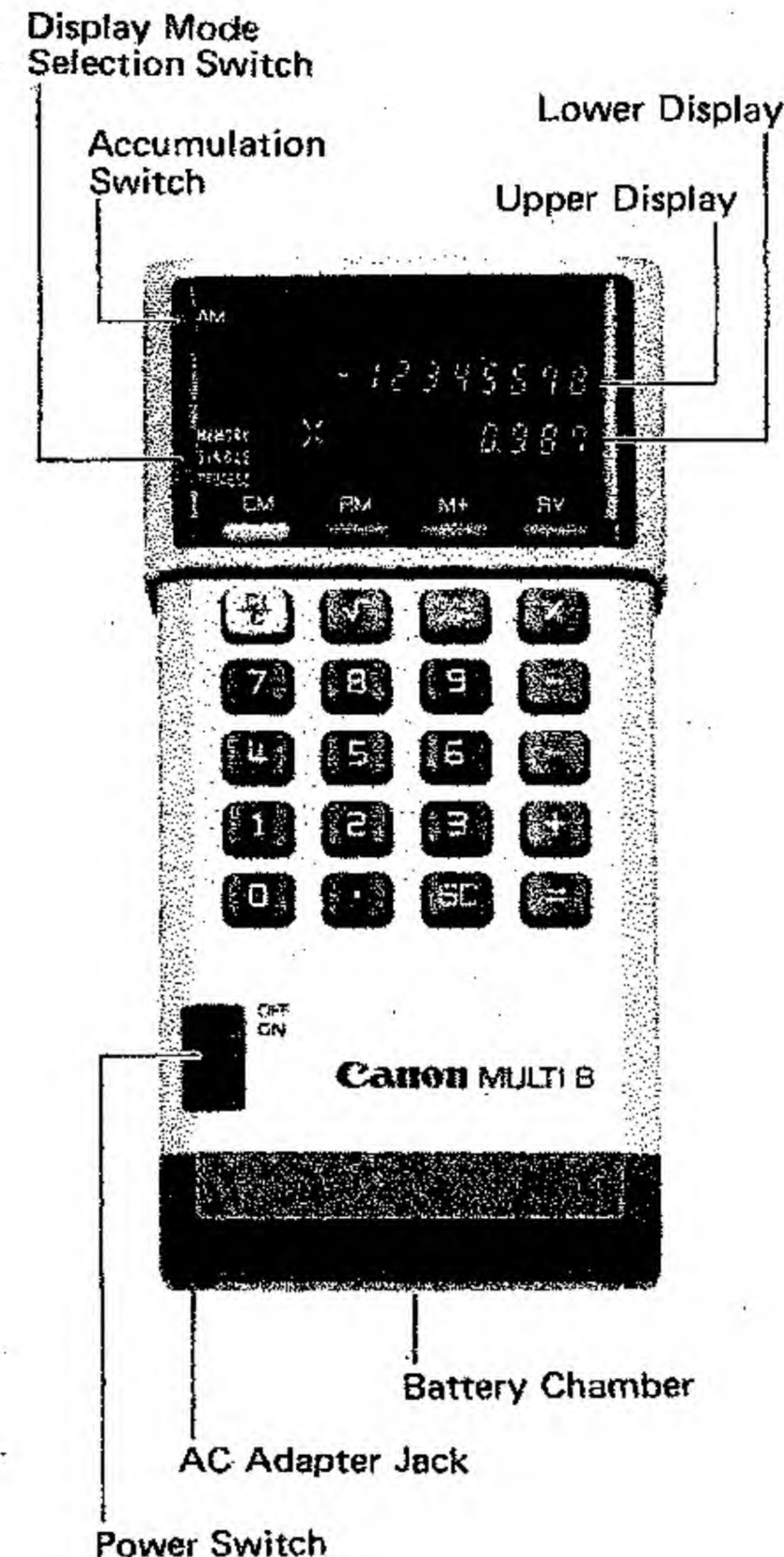
In the MEMORY and PROCESS modes the dual displays provide the following advantages:

1. **MEMORY Mode:** With memory content displayed, you can check the value of numerals in the memory.
2. **PROCESS Mode:**
  - 1) With calculation process displayed, you can verify the calculation operation. (Operators and operands are displayed at the same time, as well as basic function marks.)
  - 2) With a constant displayed, you can check the value of the constant used.

By setting the Mode Selection Switch to SINGLE mode you can use your Multi 8 as an ordinary calculator.

Thus this calculator is both easy to use and solves complicated problems accurately. It is a calculator for everyone—for those who are using a calculator for the first time and for those who must solve complex problems.

This Instruction Book has been designed to help you make the most efficient use of your Multi 8. It also provides some practical examples which point out some additional advantages of the Multi 8.





## Keys and Switches

- Power Switch:** Slide the power switch down to ON.
- Numeral Entry Keys:** Used for entering numerals.
- Decimal Point Key:** Used for entering a decimal point.

Example: 123 →   
12.3 →   
0.123 →

- Basic Function Keys:** Depress the corresponding key for addition, subtraction, multiplication or division. Depress the key for obtaining a result.

- Clear Indicator Key/Clear Key:** A double function key. Depress this key for clearing entered numerals and results. If the key is depressed once after the numerals are entered, it clears only the numerals that have just been entered. (Clear Indicator)  
However, if the key is depressed after an instruction key (, , , , ) or if it is depressed twice successively, it clears all contents of the register except the memory.

- Sign Change Key:** Used for changing the sign (+ or -) of the displayed numerals.

- Square Root Key:** Used for extracting a square root.

- Percent Plus-Minus Key:** Used for performing percentage, add-on & discount calculation.

- Memory Plus Key:** Used for accumulating numerals in the memory.

- Recall Memory Key:** Used for recalling memory content.

- Clear Memory Key:** Used for clearing memory contents.

- Reverse Key:** Used for interchanging displayed numerals and numerals stored in the calculator, such as the multiplicand and multiplier in multiplication and dividend and divisor in division. See pages 11 and 22.

- Accumulation Switch:** Used for automatically accumulating calculation results in the memory.

When this switch is in the mode, depressing the key automatically accumulates calculation results in the memory.

- Display Mode Selection Switch:**

Used for selecting display modes.

**PROCESS Mode:** When the switch is set to the PROCESS mode, the calculator has dual displays (upper display and lower display).

In the upper display, the operand appears.

In the lower display, the basic function marks (+, -, x, ÷) and operator appear as they are entered.

Results appear in the lower display.

**SINGLE Mode:** The calculator has only a lower display.

**MEMORY Mode:** The calculator has dual displays.

In the upper display, the memory mark (M) and memory content appear. The lower display is the same as that of the SINGLE mode.



## How to Load and Replace Batteries

Remove the cover of the battery chamber on the back of the Multi 8. Insert three new penlight batteries in the chamber. Insert the batteries' minus (—) end first following the drawing inside the chamber.

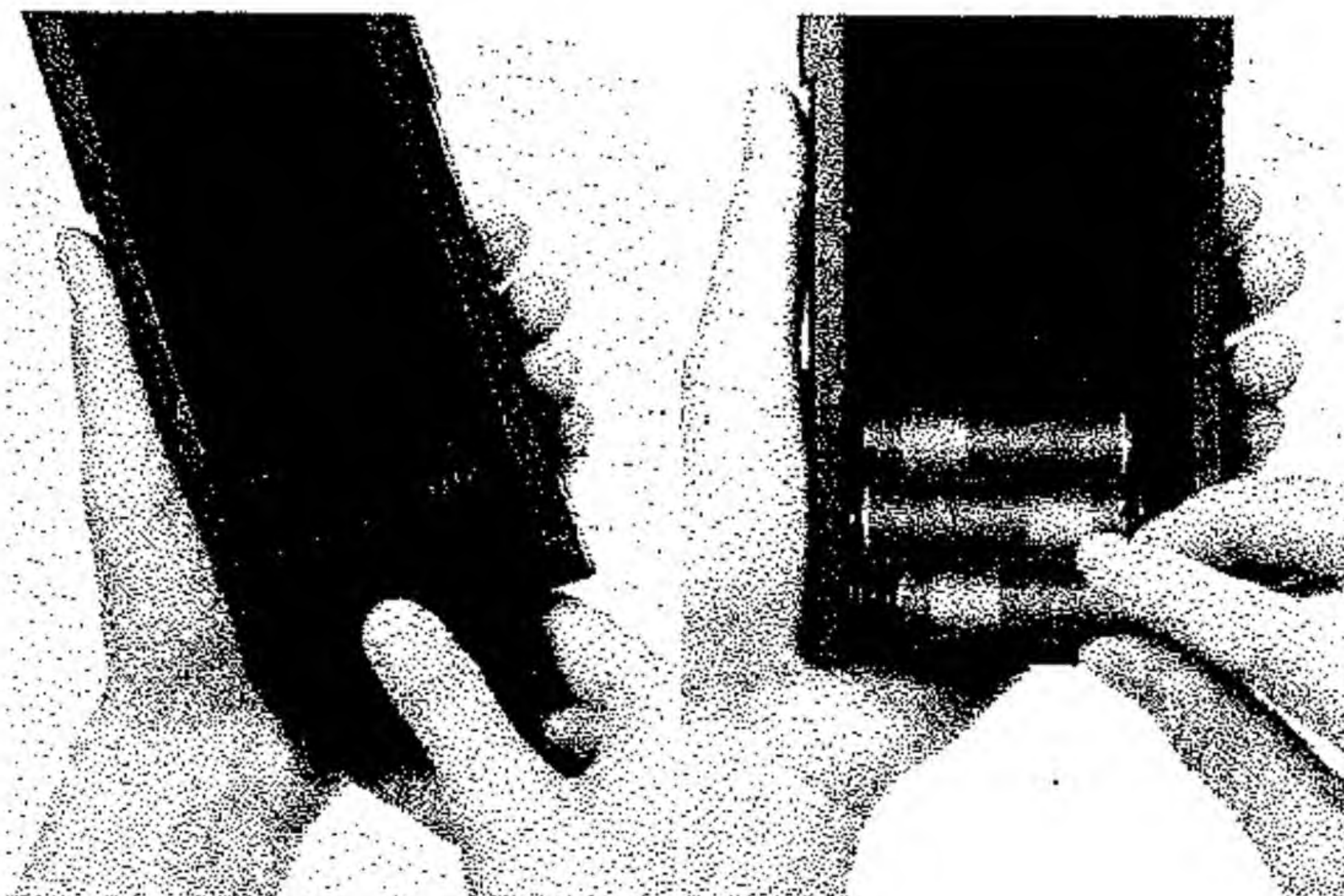
Replace the cover.

The batteries must be replaced when the entire display becomes dim, or when the leftmost and rightmost digits become darker than the other displayed digits.

If the calculator is being used in this condition, the displayed numerals may disappear abruptly, or random figures may appear. This is not a calculator failure but the batteries must be replaced immediately.

Be sure to replace all three batteries at one time.

\* Be sure to take the batteries out of the calculator if it is not to be used for more than one month.



## AC Adapter (Optional)

The Multi 8 can be operated either with batteries or with a household power source (AC power) by using Canon's special AC Adapter AD-1.

\* Do not connect any other adapter not specified by Canon.

### How to Use the Canon AC Adapter AD-1

1. Plug the AD-1 into an electric outlet.
2. Insert the output plug of the AD-1 into the AC Adapter jack of the calculator.
3. Turn on the Power Switch of calculator.

When the AD-1 is connected to the calculator, the power source is automatically switched from batteries to AC power.

Battery power will not be used in this case.



- \* Since the Canon AC Adapter AD-1 is designed especially for Canon's calculators, do not try to use it with other electric machines.
- \* Plug in the AD-1 only at the voltage specified on the rating and name plate.
- \* Turn off the Power Switch of the calculator before connecting it to or disconnecting it from the AC Adapter.
- \* When not using the Adapter, do not leave it connected to either the calculator or the electric outlet.



## Display Modes

### PROCESS Mode

When calculation is performed in the PROCESS mode, the following is displayed:

Upper display: The operand (Numerals are first displayed in the lower display and then jump to the upper display when a basic function key is depressed.)

Lower display: Basic function marks (+, -, x, ÷) and the operator

By selecting the PROCESS mode, it is possible to check the calculation process.

Function marks and numerals can be confirmed even after they are entered.

Example:

| Expression   | Operation  | Display               |
|--------------|------------|-----------------------|
|              | ( PROCESS) |                       |
| 123          | 1)         | 123.                  |
| $\times 456$ | 2)         | $\times$ 123.         |
| 56088        | 3)         | $\times$ 123.<br>456. |
| $+ 789$      | 4)         | + 56088.              |
| 56877        | 5)         | + 56088.<br>789.      |
|              | 6)         | 56877.                |

### SINGLE Mode

The calculator has only a lower display and is used as a conventional calculator.

Example:

| Expression    | Operation | Display |
|---------------|-----------|---------|
|               | ( SINGLE) |         |
| 963 ÷ 3 - 123 | 1)        | 963.    |
| = 198         | 2)        | 963.    |
|               | 3)        | 3.      |
|               | 4)        | 321.    |
|               | 5)        | 123.    |
|               | 6)        | 198.    |



## MEMORY Mode

By setting the switch to the MEMORY mode, the calculator has dual displays.



Upper display: Memory sign (M) and memory content

Lower display: Same as SINGLE mode display.

In the MEMORY mode, the dual displays have the following advantages:

- Confirmation of memory accumulation
- Confirmation of difference of memory content and result
- Confirmation of a constant entered in memory content
- \* It is possible to use the memory function both in the PROCESS and SINGLE modes, but its content is not displayed.

Example:

| Expression   | Operation  | Display          |
|--|--|------------------|
| $\begin{array}{r} 20 \times 30 = 600 \\ +) 40 \times 50 = 2000 \\ \hline 2600 \end{array}$ | <br> |                  |
| 1) $20 \times$   |  | M 0.<br>20.      |
| 2) $30$  |  | M 0.<br>30.      |
| 3) $=$   |  | M 600.<br>600.   |
| 4) $40 \times$   |  | M 600.<br>40.    |
| 5) $50$  |  | M 600.<br>50.    |
| 6) $=$   |  | M 2600.<br>2000. |

It is possible to change to any other display mode during calculation.

## Correction

### 1. How to Correct Entered Numerals

When correcting a numeral which has been just entered, depress the  $\frac{\square}{\square}$  key once, and re-enter the correct numeral.

Example:

| Expression       | Operation                                | Result    |
|------------------|--|-----------|
| $2 \times 3 = 6$ | $2 \times 2 \frac{\square}{\square} 3 =$ | ..... (6) |
|                  | ↓ incorrect entry                        |           |

- \* When the  $\frac{\square}{\square}$  key is depressed after any of the basic function keys ( $+$ ,  $-$ ,  $\times$ ,  $\div$ ) have been depressed, all registers except memory are cleared. In this case, start calculation again.

When correcting a operand alone after both the operand and operator have been entered, depress the  $\frac{\square}{\square}$  key to interchange the operand and the operator. Enter the correct operand and depress the  $\frac{\square}{\square}$  key again.

Example:

| Expression:       | Operation:  | Result    |
|-------------------|---|-----------|
| $125 \div 25 = 5$ | $123 \div 25 \frac{\square}{\square} 125 \frac{\square}{\square} =$ | ..... (5) |
|                   | ↓ incorrect operation   |           |

### 2. Correction of Basic Function Keys

When any of 4 basic function keys ( $+$ ,  $-$ ,  $\times$ ,  $\div$ ) are depressed incorrectly, the function can be changed by depressing the correct key immediately after. Then continue operation.

Example:

| Expression:       | Operation:            | Result     |
|-------------------|-----------------------|------------|
| $4 \times 3 = 12$ | $4 \div \times 3 =$   | ..... (12) |
|                   | ↓ incorrect operation |            |



## Overflow Errors

The calculator will overflow in the following instances, and further calculation will not be possible as the calculator will be electronically locked:

Clear the overflow error by depressing the  $\frac{\square}{E}$  key.

### 1. When integers of calculation result exceed 8 digits:

In the lower display the overflow sign ( E ) lights and only the 8 leftmost significant digits of the calculation result are displayed. The position of the decimal point counting from the leftmost figure indicates numbers of digits dropped.

Example:  $12345 \times 5678 \times 200 = 14018982000$

Operation:  $12345 \times 5678 \times 200 =$

(E140.18982)

↓ The position of the decimal point here indicates that 3 more rightmost digits are contained in the result.

### 2. When the integers of the memory content exceed 8 digits:

If the memory content plus numerals entered into memory exceed 8 digits, the overflow sign ( E ) lights and entered numerals are displayed in the lower display. When the display selection switch is set in the MEMORY mode, the M mark remains in the upper display in the leftmost column. The memory content is protected and it can be recalled by releasing overflow condition with depression of the  $\frac{\square}{E}$  key.

Example:

$\frac{\square}{\text{MEMORY}}$  99999999  $\frac{\square}{M+}$

123  $\frac{\square}{M+}$

$\frac{\square}{E}$

M 99999999.  
99999999.

M  
E 123.

M 99999999.  
0.

### 3. When an invalid calculation (such as $a \div 0$ , $\sqrt{-a}$ ) is performed.

## Before Starting Calculation

1. Slide the Power Switch down to ON.
2. Set the Display Mode Selection Switch to desired mode.
3. It is not necessary to depress the  $\frac{\square}{E}$  key each time before starting a new calculation.

## Calculation Examples

### NOTE:

For calculation examples 1–12 in this instruction book, the Accumulation Switch is at OFF position

### 1. Addition and Subtraction

Expression:  $8 + 3 - 4.5 = (6.5)$

| Operation |                       | $\frac{\square}{\text{PROCESS}}$ PROCESS Display Mode | $\frac{\square}{\text{SINGLE}}$ SINGLE Display Mode |
|-----------|-----------------------|---|---|
| 1)        | $\frac{\square}{8}$   | 8.  | 8.  |
| 2)        | $\frac{\square}{+}$   | + 8.  | 8.  |
| 3)        | $\frac{\square}{3}$   | + 3.  | 3.  |
| 4)        | $\frac{\square}{-}$   | - 11.   | 11.   |
| 5)        | $\frac{\square}{4.5}$ | - 4.5   | 4.5   |
| 6)        | $\frac{\square}{=}$   | 6.5   | 6.5   |



## 2. Multiplication and Division

Expression:  $5 \times (-3) \div 0.7 = (-21.428571)$

| Operation |                    | PROCESS<br>Display<br>Mode | SINGLE<br>Display<br>Mode |
|-----------|--------------------|----------------------------|---------------------------|
| 1)        | <b>S</b>           | 5.                         | 5.                        |
| 2)        | <b>X</b>           | $\times$ 5.                | 5.                        |
| 3)        | <b>G</b> <b>SC</b> | $\times$ - 3.              | - 3.                      |
| 4)        | <b>=</b>           | $\div$ -15.                | -15.                      |
| 5)        | <b>7</b>           | $\div$ -15.<br>0.7         | 0.7                       |
| 6)        | <b>=</b>           | -21.428571                 | -21.428571                |

\* When entering negative numerals, first enter the absolute value of the numeral and then depress the **SC** key.

## 3. Mixed Calculation

Expression:  $9 \div 5 \times 3 + 7 = (12.4)$

| Operation |          | PROCESS<br>Display<br>Mode | SINGLE<br>Display<br>Mode |
|-----------|----------|----------------------------|---------------------------|
| 1)        | <b>S</b> | 9.                         | 9.                        |
| 2)        | <b>=</b> | $\div$ 9.                  | 9.                        |
| 3)        | <b>5</b> | $\div$ 9.<br>5.            | 5.                        |
| 4)        | <b>X</b> | $\times$ 1.8               | 1.8                       |
| 5)        | <b>3</b> | $\times$ 1.8<br>3.         | 3.                        |
| 6)        | <b>+</b> | + 5.4                      | 5.4                       |
| 7)        | <b>7</b> | + 5.4<br>7.                | 7.                        |
| 8)        | <b>=</b> | 12.4                       | 12.4                      |





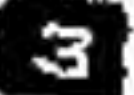







#### 4. Multiplication by a Constant

Expression:  $2 \times 3 = (6)$

$2 \times 4 = (8)$

$2 \times 5 = (10)$

| Operation  |  PROCESS<br>Display Mode |  SINGLE<br>Display Mode |
|--|---|--|
| 1)    | <div>2.</div>   | <div>2.</div>  |
| 2)    | <div>× 2.</div>   | <div>2.</div>  |
| 3)    | <div>× 3.</div>   | <div>3.</div>  |
| 4)    | <div>6.</div>   | <div>6.</div>  |
| 5)    | <div>4.</div>   | <div>4.</div>  |
| 6)  | <div>2.<br/>8.</div>  | <div>8.</div>  |
| 7)  | <div>5.</div>   | <div>5.</div>  |
| 8)  | <div>2.<br/>10.</div>   | <div>10.</div>   |

\* indicates a constant

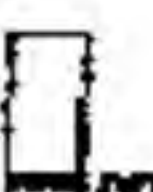









In multiplication, the product of all the successive multipliers except the last one automatically becomes the constant.

#### 5. Division by a Constant

Expression:  $6 \div 3 = (2)$

$9 \div 3 = (3)$

$12 \div 3 = (4)$

| Operation  |  PROCESS<br>Display Mode |  SINGLE<br>Display Mode |
|--|---|--|
| 1)    | <div>6.</div>   | <div>6.</div>  |
| 2)    | <div>÷ 6.</div>   | <div>6.</div>  |
| 3)    | <div>÷ 3.</div>   | <div>3.</div>  |
| 4)    | <div>2.</div>   | <div>2.</div>  |
| 5)    | <div>9.</div>   | <div>9.</div>  |
| 6)  | <div>3.<br/>3.</div>  | <div>3.</div>  |
| 7)  | <div>12.</div>  | <div>12.</div>   |
| 8)  | <div>3.<br/>4.</div>  | <div>4.</div>  |

\* indicates a constant

In division, the last entered numeral (i.e. the last divisor) automatically becomes the constant.



### 6. Power Calculation

Expression:  $3^3 = 3 \times 3 \times 3 = (27)$

Repetition of constant multiplication with 3 as a constant

| Operation |             | PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|-----------|-------------|-------------------------|------------------------|
| 1)        | $\boxed{3}$ | 3.                      | 3.                     |
| 2)        | $\times$    | $\times$ 3.             | 3.                     |
| 3)        | $=$         | 9.                      | 9.                     |
| 4)        | $=$         | 27.                     | 27.                    |

Raising to a power ( $x^n$ ) can be obtained by depressing the  $\boxed{=}$  key ( $n-1$ ) times.

### 7. Reciprocal Calculation

Expression:  $\frac{1}{2} = 2 \div 2 \div 2 = (0.5)$

Repetition of constant division

| Operation |             | PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|-----------|-------------|-------------------------|------------------------|
| 1)        | $\boxed{2}$ | 2.                      | 2.                     |
| 2)        | $\div$      | $\div$ 2.               | 2.                     |
| 3)        | $=$         | 1.                      | 1.                     |
| 4)        | $=$         | 0.5                     | 0.5                    |

The reciprocal of  $a$  can be obtained by the following operation:  $a \div \boxed{=}$

### 8. Percentage Calculation

Expression:  $17\% \text{ of } 200$   
 $\frac{200 \times 17}{100} = (34)$

| Operation |               | PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|-----------|---------------|-------------------------|------------------------|
| 1)        | $\boxed{200}$ | 200.                    | 200.                   |
| 2)        | $\times$      | $\times$ 200.           | 200.                   |
| 3)        | $\boxed{17}$  | $\times$ 17.            | 17.                    |
| 4)        | $\%$          | 34.                     | 34.                    |

To find what percent 123 is of 456,

Expression:  $\frac{123}{456} \times 100 = (26.973684\%)$

| Operation |               | PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|-----------|---------------|-------------------------|------------------------|
| 1)        | $\boxed{123}$ | 123.                    | 123.                   |
| 2)        | $\div$        | $\div$ 123.             | 123.                   |
| 3)        | $\boxed{456}$ | $\div$ 456.             | 456.                   |
| 4)        | $\%$          | 26.973684               | 26.973684              |



### 9. Add-on Calculation

20% add-on of 200 Expression:  $200 + 200 \times \frac{20}{100} = (240)$

| Operation     | PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|---------------|-------------------------|------------------------|
| 1) <b>200</b> | 200.                    | 200.                   |
| 2) <b>x</b>   | 200.<br>x               | 200.                   |
| 3) <b>20</b>  | 200.<br>x 20.           | 20.                    |
| 4) <b>%±</b>  | 40.                     | 40.                    |
| 5) <b>+</b>   | 240.                    | 240.                   |

### 10. Discount Calculation

20% discount of 200 Expression:  $200 - 200 \times \frac{20}{100} = (160)$

| Operation     | PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|---------------|-------------------------|------------------------|
| 1) <b>200</b> | 200.                    | 200.                   |
| 2) <b>x</b>   | 200.<br>x               | 200.                   |
| 3) <b>20</b>  | 200.<br>x 20.           | 20.                    |
| 4) <b>%±</b>  | 40.                     | 40.                    |
| 5) <b>-</b>   | 160.                    | 160.                   |

20

### 11. Extraction of Square Root

Expression:  $\sqrt{3} = (1.7320508)$

| Operation   | PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|-------------|-------------------------|------------------------|
| 1) <b>3</b> | 3.                      | 3.                     |
| 2) <b>√</b> | 1.7320508               | 1.7320508              |

Expression:  $\sqrt{2} + \sqrt{3} = 3.1462643$

| Operation   | PROCESS<br>Display Mode  | SINGLE<br>Display Mode |
|-------------|--------------------------|------------------------|
| 1) <b>2</b> | 2.                       | 2.                     |
| 2) <b>√</b> | 1.4142135                | 1.4142135              |
| 3) <b>+</b> | 1.4142135<br>+           | 1.4142135              |
| 4) <b>3</b> | 1.4121354<br>+ 3.        | 3.                     |
| 5) <b>√</b> | 1.4142135<br>+ 1.7320508 | 1.7320508              |
| 6) <b>=</b> | 3.1462643                | 3.1462643              |



## 12. Calculation with Reverse Key ( **RV** )

Expression:  $\frac{123}{456+789} = 0.0987951$

| Operation       | PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|-----------------|-------------------------|------------------------|
| 1) <b>4 5 6</b> | 456.                    | 456.                   |
| 2) <b>+</b>     | 456.<br>+               | 456.                   |
| 3) <b>7 8 9</b> | 456.<br>789.<br>+       | 789.                   |
| 4) <b>÷</b>     | 1245.<br>÷              | 1245.                  |
| 5) <b>1 2 3</b> | 1245.<br>123.<br>÷      | 123.                   |
| 6) <b>RV</b>    | 123.<br>1245.<br>÷      | 1245.                  |
| 7) <b>=</b>     | 0.0987951               | 0.0987951              |

## 13. Memory Calculation

Expression:  $20 \times 30 = (600)$   
 $40 \times 50 = (2000)$   
 $15 \times 20 = (300)$   
 Total (2900)

| Operation       | MEMORY<br>PROCESS<br>Display Mode | SINGLE<br>Display Mode |
|-----------------|-----------------------------------|------------------------|
| <b>AM(on)</b>   |                                   |                        |
| <b>CM</b>       |                                   |                        |
| 1) <b>2 0 X</b> | M 0.<br>20.                       | 20.                    |
| 2) <b>3 0 =</b> | M 600.<br>600.                    | 600.                   |
| 3) <b>4 0 X</b> | M 600.<br>40.                     | 40.                    |
| 4) <b>5 0 =</b> | M 2600.<br>2000.                  | 2000.                  |
| 5) <b>1 5 X</b> | M 2600.<br>15.                    | 15.                    |
| 6) <b>2 0 =</b> | M 2900.<br>300.                   | 300.                   |
| 7) <b>RM</b>    |                                   | 2900.                  |



#### 14. Two Column Addition

|             |       |        |
|-------------|-------|--------|
| Expression: | Q'ty  | Amount |
|             | 23    | 230    |
|             | 34    | 170    |
|             | 56    | 448    |
| Total       | (113) | (848)  |

| Operation | MEMORY<br>Display Mode | SINGLE<br>Display Mode |
|-----------|------------------------|------------------------|
| (off)<br> |                        |                        |
| 1)        | M 23.<br>23.           | 23.                    |
| 2)        | M 23.<br>230.          | 230.                   |
| 3)        | M 57.<br>34.           | 34.                    |
| 4)        | M 57.<br>400.          | 400.                   |
| 5)        | M 113.<br>56.          | 56.                    |
| 6)        | M 113.<br>848.         | 848.                   |
| 7)        |                        | 113.                   |

#### 15. Applications

##### 1) Verification

The result of a given calculation is entered into the memory. The entire calculation is performed again and the two results are compared.

Expression: 123  
456  
+ 789  
(1368)

| Operation                       | Display                       |
|---------------------------------|-------------------------------|
| MEMORY<br>Display Mode<br>(off) |                               |
| 1)                              | M 0.<br>123.                  |
| 2)                              | M 0.<br>579.                  |
| 3)                              | M 0.<br>1368.                 |
| 4)                              | M 1368.<br>1368.              |
| 5)                              | M 1368.<br>123.               |
| 6)                              | M 1368.<br>579.               |
| 7)                              | M 1368.<br>1368. verification |



## 2) Breakdown of Multiplication Process



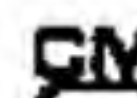















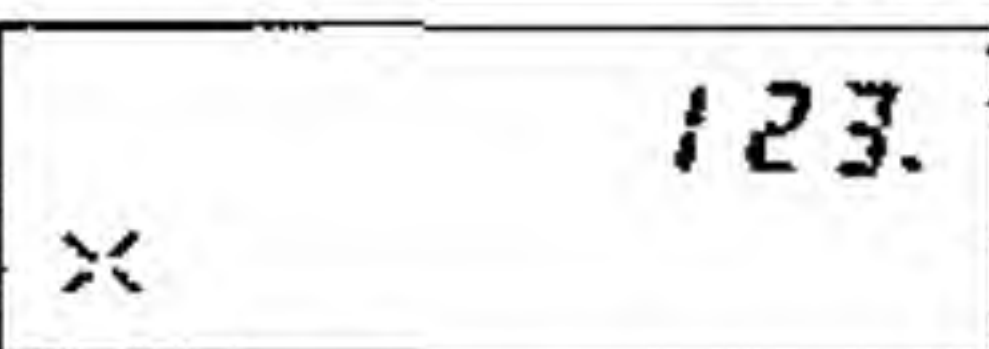



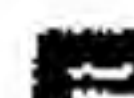
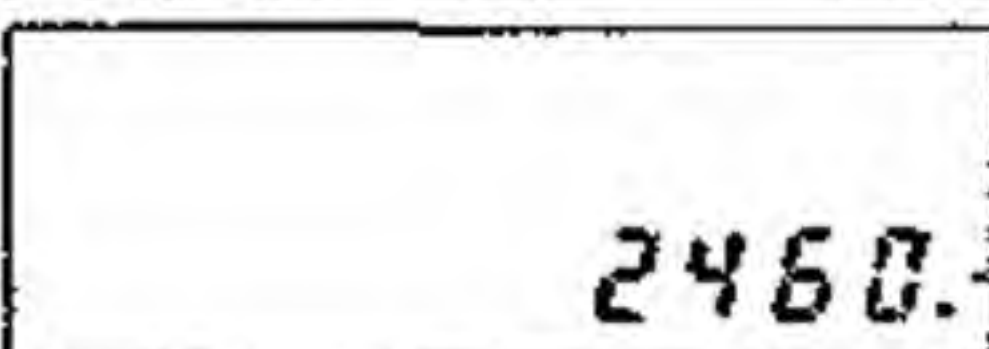

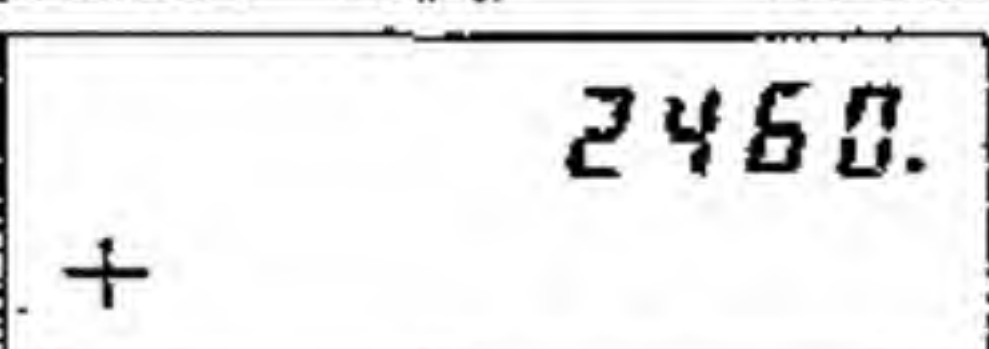
Expression: 
$$\begin{array}{r} 123 \\ \times 23 \\ \hline 369 \\ 2460 \\ \hline (2829) \end{array}$$

10) 

11) 

|   |           |
|---|-----------|
|   | 2460.     |
| + | 369.      |
|   | 2829..... |

Total product

| Display  | Operation  |
|--|--|
|  PROCESS<br> AM (off)  GM<br>1)    |  |
| 2)    |    |
| 3)    |    |
| 4)     |   |
| 5)      |  |
| 6)    |  |
| 7)     |  |
| 8)    |  |
| 9)    |  |

Product of first multiplication

Product of second multiplication



### 3) Composition Ratio

To obtain the sales percentage of each branch store against total sales:

Expression:

$$\text{Sales \%} = \frac{100}{\text{Total sales}} \times \text{Sales of each store}$$

| Store | Sales (\$) | Sales (%) |
|-------|------------|-----------|
| A     | 125        | (25)      |
| B     | 185        | (37)      |
| C     | 190        | (38)      |
| Total | (500)      | (100)     |

| Operation          | Display                    |
|--------------------|----------------------------|
| PROCESS<br>PROCESS | PROCESS<br>Display<br>Made |
| AM (on) EM         |                            |
| 1) 1 2 5           | 125.                       |
| 2) +               | + 125.                     |
| 3) 1 8 5           | + 125.<br>185.             |
| 4) +               | + 310.                     |
| 5) 1 9 0           | + 310.<br>190.             |
| 6) ÷               | ÷ 500.                     |
| 7) 1 0 0           | ÷ 500.<br>100.             |
| 8) BY              | ÷ 100.<br>500.             |

| Operation | Display                      |
|-----------|------------------------------|
| 9) x      | x 0.2                        |
| 2) 1 2 5  | x 0.2<br>125.                |
| 11) =     | 25. .... Sales % of A        |
| 12) 1 8 5 | 185.                         |
| 13) =     | 0.2<br>37. .... Sales % of B |
| 14) 1 9 0 | 190.                         |
| 15) =     | 0.2<br>38. .... Sales % of C |
| 16) RM    | 100. Total %                 |



#### 4) Proportional Allotment Calculation

To distribute a total budget of \$1,548 among three stores according to their sales records.  
Expression:

$$\text{Allotment} = \frac{\text{Budget}}{\text{Total sales}} \times \text{Sales of each store}$$

| Store | Sales Record | Allotment |
|-------|--------------|-----------|
| A     | 147          | (294)     |
| B     | 258          | (516)     |
| C     | 369          | (738)     |
| Total | (774)        | 1548      |

| Operation             | Display         |
|-----------------------|-----------------|
| PROCESS<br>AM (on) CM |                 |
| 1) 1 4 7              | 147.            |
| 2) +                  | +               |
| 3) 2 5 8              | 147.<br>+ 258.  |
| 4) +                  | 405.            |
| 5) 3 6 9              | 405.<br>+ 369.  |
| 6) ÷                  | 774.            |
| 7) 1 5 4 8            | 774.<br>÷ 1548. |
| 8) RY                 | 1548.<br>÷ 774. |

| Operation | Display                        |
|-----------|--------------------------------|
| 9) x      | 2.<br>x                        |
| 10) 1 4 7 | 2.<br>x 147.                   |
| 11) =     | 294. .... Allotment to A       |
| 12) 2 5 8 | 258.                           |
| 13) =     | 2.<br>516. .... Allotment to B |
| 14) 3 6 9 | 369.                           |
| 15) =     | 2.<br>738. .... Allotment to C |
| 16) RM    | 1548. .... Total Allotment     |

#### 5) Calculation of Change

A father buys an electric model railway as a gift for his son. He has taken \$50.00 and some small change with him to the department store.

What will be the change from his total purchases?

| Item        | Quantity | Cost per item |
|-------------|----------|---------------|
| RR Track    | 1        | \$18.50       |
| Box Cars    | 3        | 4.50          |
| Cattle Cars | 2        | 3.60          |
| Engine      | 1        | 3.75          |
|             |          | (\$42.95)     |



$$\text{Change} = \$50.05 - (42.95) = (\$7.10)$$

| Operation                  | Display          |                       |
|----------------------------|------------------|-----------------------|
| MEMORY MEMORY Display Mode |                  |                       |
| AM (on)  CM                |                  |                       |
| 1)                         | M 18.5<br>18.5   |                       |
| 2)                         | M 23.<br>4.5     |                       |
| 3)                         | M 27.5<br>4.5    |                       |
| 4)                         | M 32.<br>4.5     |                       |
| 5)                         | M 35.6<br>3.6    |                       |
| 6)                         | M 39.2<br>3.6    |                       |
| 7)                         | M 42.95<br>3.75  | Total purchase        |
| 8)                         | M 42.95<br>50.05 |                       |
| 9)                         | M 42.95<br>42.95 |                       |
| 10)                        | M 50.05<br>7.1   | Amount paid<br>Change |

### 6) Calculation of Principal Required

What will be the principal required to obtain \$20,000 of savings plus interest after 5 years at 10% compound yearly interest?

Formula:  $\frac{\text{Desired savings}}{(1 + \text{rate})^{\text{No. of yrs.}}} = \text{Principal required.}$

$$\text{Principal} = \frac{20,000}{(1+0.1)^5} = (12418.425)$$

| Operation                  | Display               |                    |
|----------------------------|-----------------------|--------------------|
| MEMORY MEMORY Display Mode |                       |                    |
| AM (off)  CM               |                       |                    |
| 1)                         | M 0<br>20000.         | Desired savings    |
| 2)                         | M 20000.<br>20000.    |                    |
| 3)                         | M 20000.<br>20000.    |                    |
| 4)                         | M 20000.<br>1.1       |                    |
| 5)                         | M 20000.<br>18181.818 |                    |
| 6)                         | M 20000.<br>16528.925 |                    |
| 7)                         | M 20000.<br>15026.295 |                    |
| 8)                         | M 20000.<br>13660.268 |                    |
| 9)                         | M 20000<br>12418.425  | Principal required |



# 7) Calculation of Savings Time Required

Every year a family deposits \$1,000 in a bank at 7% yearly compound interest.

How many years will it take to make a total of at least 10,000?

Formula:

$$\$10,000 < \sum_{n=1}^n (1.07 \times 1000)^n$$

The method of operation:

Perform the calculation  $1.07 \times 1000 =$  ... for as many times as necessary until the contents of the memory are equal to or greater than 10,000. The number of times the  $=$  key is depressed is equal to the number of years of deposit. In this example the 8th depression of the  $=$  key yields a total of 10,977.988. So eight years is the amount of time it will take to make a total of at least \$10,000.

| Operation   | Display                |
|---|------------------------|
| <div> <div>MEMORY</div> <div>AM (on)</div> </div> <div> <div>MEMORY Display Mode</div> <div>CM</div> </div> |                        |
| 1) $1.07 \times$  | M 0.<br>1.07           |
| 2) $1000$   | M 0.<br>1000.          |
| 3) $=$  | M 1070.<br>1070.       |
| 4) $=$  | M 2214.9<br>1144.9     |
| 5) $=$  | M 3439.943<br>1225.043 |
| 6) $=$  | M 4750.739<br>1310.796 |

7)  $=$

8)  $=$

9)  $=$

10)  $=$

|                          |                |
|--------------------------|----------------|
| M 6153.2907<br>1402.5517 | 5th year total |
| M 7654.021<br>1500.7303  | 6th year total |
| M 9259.8024<br>1605.7814 | 7th year total |
| M 10977.988<br>1718.186* | 8th year total |

\* This figure is the total amount of principal plus interest for \$1,000 deposited for 8 years at 7% compound interest.



# 8) Principal and Interest in Time Deposit

A person put a principal of \$10,000 in a bank on a 3-year time deposit with yearly interest of 8%. When the deposit matured, he put the total of principal and interest on a 2-year time deposit with 7% yearly interest.

What will the total of principal and interest be after 5 years?

Expression:

Total principal and interest =

$$10,000 \times (1.08)^3 \times (1.07)^2 = \$14,422.442$$

| Operation           | Display          |
|---------------------|------------------|
| PROCESS<br>AM (off) |                  |
| 1) 1 0 0 0 0        | 1.08             |
| 2) x                | 1.08<br>x        |
| 3) 1 0 0 0 0        | 1.08<br>x 10000. |
| 4) =                | 10800.           |
| 5) =                | 1.08<br>11664.   |
| 6) =                | 1.08<br>12597.12 |
| 7) PV               | 12597.12<br>1.08 |
| 8) 1 0 0 7          | 1.07             |

Total of  
end of  
1st time  
deposit  
(3 years)

9) PV

10) =

11) =

|                      |
|----------------------|
| 12597.12             |
| 1.07<br>13478.318    |
| 1.07<br>14422.442... |




































Total at  
end of  
2nd  
deposit  
(5 years)



### 9) Shopping Calculation

A housewife went to a supper market for her groceries. The following is her calculation using the Multi 8:

| Item           | Cost per item | Quantity | Cost   | Running Total |
|----------------|---------------|----------|--------|---------------|
| Ground beef    | \$1.50        | 1        | (1.50) | (1.50)        |
| Eggs           | .75           | 3        | (2.25) | (3.75)        |
| Vegetables     | .50           | 5        | (2.50) | (6.25)        |
| Cans of soup   | .25           | 6        | (1.50) | (7.75)        |
| Jars of coffee | 1.50          | 5        | (7.50) | (15.25)       |
| Ice cream      | .50           | 10       | (5.00) | (20.25)       |

| Operation  | Display                           |
|--|-----------------------------------|
|  MEMORY      MEMORY Display Mode<br> AM (off)  CM   |                                   |
| 1)       | <div>M 1.5</div> <div>1.5</div>   |
| 2)       | <div>M 3.75</div> <div>2.25</div> |
| 3)        | <div>M 6.25</div> <div>2.5</div>  |
| 4)        | <div>M 7.75</div> <div>1.5</div>  |
| 5)         | <div>M 15.25</div> <div>7.5</div> |
| 6)        | <div>M 20.25</div> <div>5.</div>  |
|  | <div>.... Total cost</div>        |

### Specifications

**Type:** Palmtronic Multi 8 electronic calculator with dual displays

**Display:** Fluorescent tube display

Upper display: 8-digit numeral + 1-digit minus + 1-digit M sign

Lower display: 8-digit numeral + 1-digit minus/error + 1-digit function sign

**Registers:** 4 for operation

1 for memory

**Calculation Capacity:** 8 digits in all calculation

**Results:** Leftmost significant digit priority with all-floating decimal point system

**Negative Numbers:** True value with floating minus sign

**Types of Calculation:** Addition, subtraction, multiplication and division. Chain multiplication and division. Multiplication and division by a constant. Powers, Reciprocal, Percentage add-on & discount.

Sum and difference of products and quotients. Extraction of square root. Various mixed calculations

**Indication Functions:** Error indication, minus sign, function indication, memory sign

**Elements:** MOS-LSI

**Power Source:**

- 3 penlight dry batteries (Size AA) (DC 4.5V 0.6W)  
High performance manganese batteries for approx. 7.5 hours of use

Alkaline batteries for approx. 14 hours

- AC with Canon AC Adapter AD-1

**Usable Temperature:** 0°C—40°C (32°F—104°F)

**Size:** 156mm long x 78mm wide x 21mm high  
(6-1/8" x 3-1/16" x 13/16")

**Weight:** 230g (8.11 oz.)

Subject to change without notice.